



12DS7

TWIN DIODE—POWER TETRODE

9-PIN MINIATURE TYPE

*For use in automobile radio receivers
operating directly from 12-volt storage batteries*

12DS7

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

Voltage range. 10 to 15.9 dc volts

*This voltage range is on an absolute basis. For long-
est life, it is recommended that the heater be operated
within the voltage range of 11 to 14 volts.*

Current (Approx.) at

12.6 volts 0.4 amp

Direct Interelectrode Capacitances:⁰

Tetrode Unit:

Grid No.2 to plate 12.5 μ f

Grid No.2 to cathode, grid No.1,

and heater 13 μ f

Plate to cathode, grid No.1, and heater. 2 μ f

Diode Units:

Diode plate No.1 to cathode and

heater 0.5 μ f

Diode plate No.2 to cathode and

heater 0.5 μ f

Diode plate No.1 to diode plate No.2 0.1 μ f

Tetrode grid No.2 to diode plate No.1. 0.15 max. μ f

Tetrode grid No.2 to diode plate No.2. 0.15 max. μ f

Characteristics, Class A₁ Amplifier (Tetrode Unit):

Heater Voltage 12.6 volts

Plate Voltage. 12.6 volts

Grid-No.2 (Control-Grid) Voltage:

Developed across a 2.2-megohm resistor -0.5 volt

Grid-No.1 (Space-Charge-Grid) Voltage. 12.6 volts

Plate Resistance (Approx.) 480 ohms

Amplification Factor, Grid No.2 to Plate 7.2

Transconductance, Grid No.2 to Plate 15000 μ hos

Plate Current. 40 ma

Grid-No.1 Current. 75 ma

Mechanical:

Operating Position Any

Maximum Overall Length 2-5/8"

Maximum Seated Length. 2-3/8"

Length, Base Seat to Bulb Top (Excluding tip). 2" $\pm$ 3/32"

Diameter 0.750" to 0.875"

Dimensional Outline. See General Section

Bulb T6-1/2

⁰: See next page.

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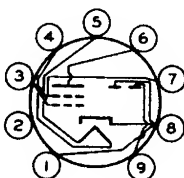


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TWIN DIODE—POWER TETRODE

Base. Small-Button Noval 9-Pin (JETEC No.E9-1)
 Basing Designation for BOTTOM VIEW. 9JU

Pin 1—Plate of Diode
 Unit No.2
 Pin 2—No Connec-
 tion
 Pin 3—Grid No.1 of
 Tetrode Unit
 Pin 4—Heater
 Pin 5—Heater



Pin 6—Plate of
 Tetrode Unit
 Pin 7—Grid No.2 of
 Tetrode Unit
 Pin 8—Cathode
 Pin 9—Plate of Diode
 Unit No.1

TETRODE UNIT — AUDIO DRIVER

Maximum Ratings, Design-Center Values Except as Noted:

PLATE VOLTAGE	16 max.	volts
GRID-No.2 (CONTROL-GRID) VOLTAGE:		
Negative-bias value	-16 max.	volts
GRID-No.1 (SPACE-CHARGE-GRID) VOLTAGE		
(Absolute maximum).	16 [■] max.	volts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode .	16 max.	volts
Heater positive with respect to cathode .	16 max.	volts

Typical Operation:

Cathode Bias

Heater Voltage.	12.6	volts
Plate-Supply Voltage.	12.6	volts
Plate Voltage	Obtained from indicated plate supply through series 100-henry choke having dc resistance of 150 ohms	
Grid-No.1 Supply Voltage.	12.6	volts
Grid-No.2 Supply Voltage.	0	volts
Grid-No.2 Resistor.	1.8	megohms
Cathode Resistor.	18	ohms
Peak AF Grid-No.2 Supply Voltage (Approx.):		
From 3.3-megohm signal source.	2.85	volts
Zero-Signal Plate Current (Approx.)	23	ma
Max.-Signal Plate Current	13	ma
Grid-No.1 Current	77	ma
Load Resistance	1250	ohms
Total Harmonic Distortion	8	%
Max.-Signal Power Output.	10	mw

Grid-No.2-Resistor Bias

Heater Voltage.	12.6	volts
Plate Voltage	12.6	volts
Grid-No.1 Voltage	12.6	volts

○, ■: See next page.



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Grid-No.2 Voltage:

Obtained by rectification through a 2.2-megohm resistor.	-2	volts
Peak AF Grid-No.2 Voltage (Approx.): From 0.1-megohm signal source.	2.5	volts
Zero-Signal Plate Current (Approx.).	40	ma
Max.-Signal Plate Current.	8	ma
Grid-No.1 Current.	75	ma
Load Resistance.	800	ohms
Total Harmonic Distortion.	10	%
Max.-Signal Power Output	40	mw

Maximum Circuit Values:

Grid-No.2-Circuit Resistance	10 max. megohms
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DIODE UNITS — Two

Values are for Each Unit

Maximum Ratings, Design-Center Values:

PLATE CURRENT.	5 max.	ma
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode. .	16 max.	volts
Heater positive with respect to cathode. .	16 max.	volts

Characteristics:

Heater Voltage	12.6	volts
Plate Current for plate volts = 10	3	ma

○ Without external shield.

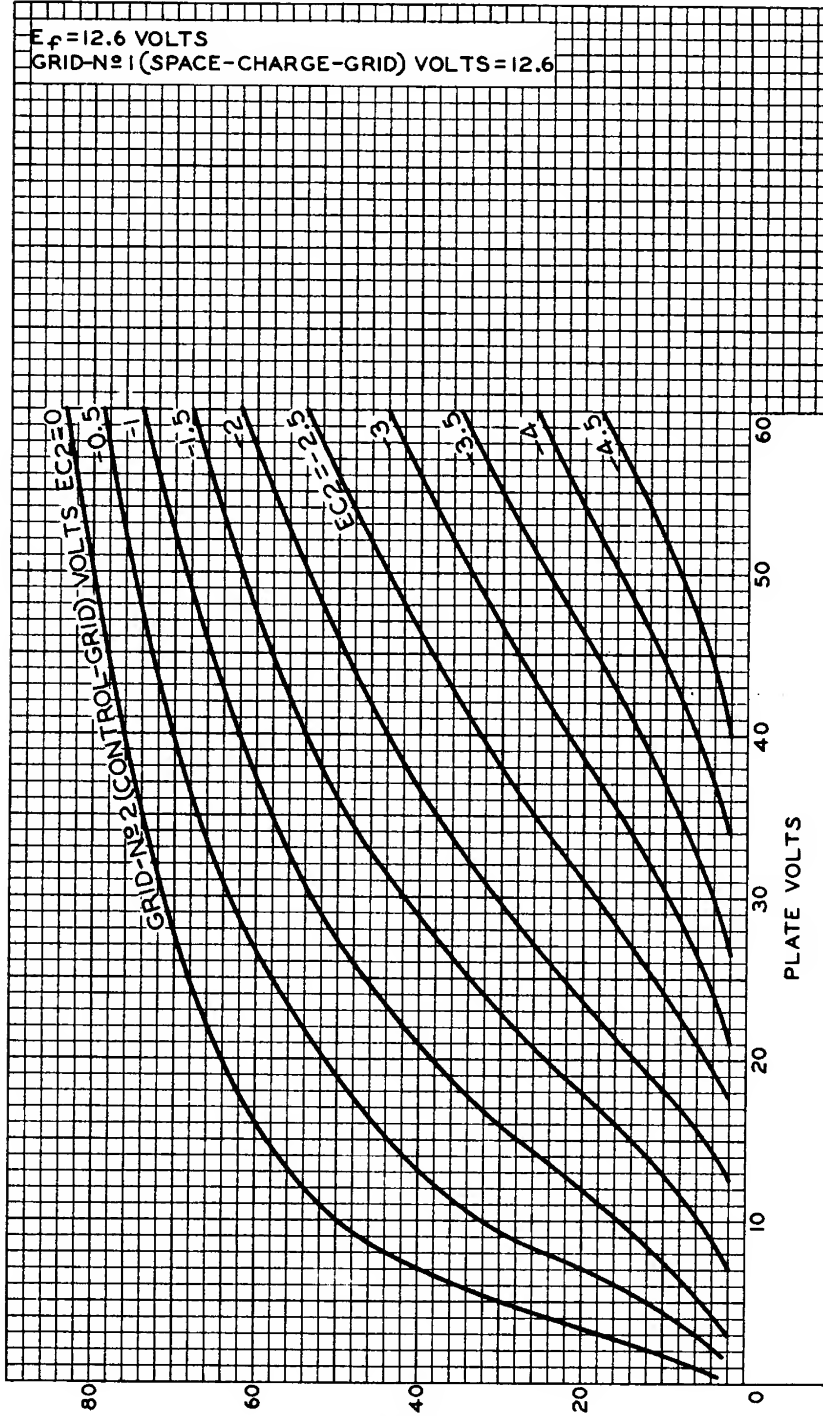
■ Under no circumstances should this absolute value be exceeded.

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AVERAGE PLATE CHARACTERISTICS TETRODE UNIT



ELECTRON TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-9670



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AVERAGE CHARACTERISTICS TETRODE UNIT

